



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/725,649	12/02/2003	Wenguang Ma	ALCN-101US3	4523
23122	7590	04/14/2005	EXAMINER	
RATNERPRESTIA P O BOX 980 VALLEY FORGE, PA 19482-0980			VO, HAI	
			ART UNIT	PAPER NUMBER
			1771	
DATE MAILED: 04/14/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

45

Office Action Summary	Application No. 10/725,649	Applicant(s) MA ET AL.	
	Examiner Hai Vo	Art Unit 1771	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>0303</u> . | 6) <input type="checkbox"/> Other: _____ |

20

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3, 5, 6 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Tusim et al (US 6,213,540). Tusim teaches an energy absorbing article comprising foamed polyester core material bonded between two structural skins (column 3, lines 30-33, column 9, lines 50-57). The core is anisotropic (abstract). The structural skin comprises a thermoplastic resin (column 9, lines 55-60). The core comprises a reinforcing agent (column 9, lines 60-65). Tusim discloses the foam core being bonded to the non-foamed layer by a thermosetting adhesive. Tusim discloses the foam core being laminated to the separate structural skins. Since the structural skins are themselves non-foamed layers, it is the examiner's position that the foam core is laminated to the structural skins by a thermosetting adhesive as well. It is the examiner's position that Tusim anticipates the claimed subject matter.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 1771

4. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tusim et al (US 6,213,540) as applied to claim 1 above, further in view of Crane et al (US 5,833,782). Tusim does not specifically disclose the structural skin comprising glass fibers. Crane, however, discloses an energy-absorbing article comprising a foam core sandwiched between two structural skins of fiberglass reinforced urethane (column 3, lines 15-20). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the glassfibers in the structural skin motivated by the desire to provide additional rigidity to the foam core and enhance energy absorption by allowing more crushing of the foam core prior to any motion of the skins (see Crane, column 12, lines 48-54).
5. Claim 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tusim et al (US 6,213,540) as applied to claim 1 above, further in view of Park et al (US 5,475,037). Tusim does not specifically disclose the polyester foam core being a polyethylene terephthalate foam. Park, however, discloses the polyester foam strands made from a polyethylene terephthalate (column 2, lines 40-45). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use a polyethylene terephthalate resin to form the foam core because polyethylene terephthalate is typical form of polyester and Park provides necessary details to practice the invention of Tusim.
6. Claims 1-5, 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mason et al (US 6,197,233) in view of Grinshpun et al (US 6,844,055) as evidenced by Chen et al (US 6,165,308). Mason teaches a foam product comprising a plurality

Art Unit: 1771

of a coalescent extruded foam strands of polystyrene and there are no inter-strand voids (Table II, sample ST-1). Mason teaches the foam strands comprising a fire retardant (column 7, lines 39-40). Mason teaches that the cell size is different when measured in different orientations (table II). Likewise, the cells of the foam layer have an anisotropic shape. Mason teaches the foam product having foam density, cell size within the ranges disclosed in Applicants' specification. Mason does not teach the foam product comprising a polyester. Grinshpun, however, teaches a foam structure comprising both solid and hollow coalesced foam strands made from a mixture of polystyrene and polyethylene terephthalate (column 10, lines 17-61, and column 11, lines 50-54). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use polyester in combination with polystyrene in the foam product because such is the intended use of the product and Grinshpun provides necessary details to practice the invention of Mason.

Mason does not teach a composite material having the foam product being bonded to one or more structural skins. Grinshpun, however, teaches a foam structure comprising an oriented strand board bonded to at least one external surface portion of the foam strands (column 8, lines 37-40, claim 6). Chen evidences that the oriented strand board is made from a blend of glass fibers and a thermosetting binder (column 1, lines 25-40). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use one facing material bonded to at least one external surface portion of the foam strands

Art Unit: 1771

motivated by the desire to provide dimensional stability and additional strength to the foam strands.

7. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mason et al (US 6,197,233) in view of Grinshpun et al (US 6,844,055) as evidenced by Chen et al (US 6,165,308) as applied to claim 1, further in view of Tusim et al (US 6,213,540). Mason does not specifically disclose the structural skin adhered to the foam structure by a resin. Tusim discloses the foam core being bonded to the non-foamed layer by a thermosetting adhesive. Tusim discloses the foam core being laminated to the separate structural skins. Since the structural skins are themselves non-foamed layers, it is the examiner's position that Tusim broadly discloses the foam core laminated to the structural skins by a thermosetting adhesive (column 23-57). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use a thermosetting resin to join the structural skins to the strand foams motivated by the desire to provide improved adhesion strength between them.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai Vo whose telephone number is (571) 272-1485. The examiner can normally be reached on M,T,Th, F, 7:00-4:30 and on alternating Wednesdays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on (571) 272-1478. The fax

Art Unit: 1771

phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

HV

Hai Vo
Tech Center 1771